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A RAND NOTE

**A PERSPECTIVE ON THE USAF COLLOCATED
OPERATING BASE SYSTEM**

Donald E. Lewis, Bruce W. Don,
Robert M. Paulson, Willis H. Ware

July 1986

N-2366-AP

Prepared for

The United States Air Force

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→ This Note documents the results of an evaluation of selected management issues associated with the development of the Collocated Operating Base (COB) program in NATO. The COB concept was developed in response to the requirements for bedding down the large number of ~~U.S. Air Force~~ aircraft to be sent to Europe in support of current contingency plans to augment forces of the U.S. Air Forces in Europe (USAFE) based in the theater. The research was designed to: (1) assess the current status of the COB system of air bases in Europe; (2) evaluate the capability of the COBs, especially their ability to generate and sustain wartime sorties; (3) identify means of enhancing the combat contribution of the COBs; and (4) identify actions that could improve the wartime readiness of COB-related resources. The authors suggest that the USAFE staff must develop two general policy areas to ensure that the COBs, as a system, provide the planned defense posture; a concerted program to increase the peacetime emphasis on developing the COBs as a system; and specific programs to evaluate, test, and increase the war-fighting capabilities of the COB-based augmentation air forces. ↗

→ USAF

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PREFACE

This Note documents the results of an evaluation of selected management issues associated with the development of the Collocated Operating Base (COB) program in NATO.

The research, which was begun in late 1983, was undertaken at the request of the Commander in Chief, U.S. Air Forces Europe (CINCUSAFE). It involved interviews with personnel responsible for the COB program and with development preparations at Hq. USAFE and Hq. Tactical Air Command (TAC), supplemented by on-site observations of a limited number of actual COB deployments. The observations and findings from the research were presented to the USAFE staff in a series of briefings in late 1984 and early 1985. They were also briefed at Hq. U.S. Air Force, Hq. TAC, and Hq. Air National Guard. While specific to Hq. USAFE, the findings are of general interest to all Air Force commands and organizations concerned with the operations and support of COB-based units.

This work was conducted as part of the Project AIR FORCE project "Analysis of European Theater Air Operations and Issues." The project staff includes a research team stationed at Hq. USAFE (Ramstein), which was primarily responsible for development and execution of the research described here.

SUMMARY

The concept of collocated operating bases (COBs) was developed in response to the requirements for bedding down the large number of USAF aircraft to be sent to Europe in support of current contingency plans to augment USAFE forces based in the theater. By M-day + 30, over 60 percent of all U.S. aircraft in Europe will have been flown in from the United States and bedded down at COBs. COBs include both active and standby military airfields in NATO countries. They are designed to provide the augmentation units with "Minimum Essential Facilities," which include parking areas and storage areas for fuel and ammunition. Not all COBs are alike; some are fully developed, intensively active main operating bases, while others are merely an airfield runway with space for parking and storage.

USAFE plans to develop and extend the COB network to over 70 locations, while improving facilities and exercise programs at existing COBs. The latter are conducted as part of other Air Force-wide programs such as the annual Crested Cap and Checkered Flag CONUS-to-Europe deployments and extended training efforts.

The units and organizations that participate in the management of COB expansion and improvement programs are in transition. Certain functions are being transferred from the USAFE fighter wings to a new USAFE organization (the 7100 Air Base Wing). Others are managed by a program task force (PROTAF) committee in Hq USAFE, and yet others remain with the various functional staffs.

On the basis of our observations of COB exercises and our interviews with responsible personnel, we do not believe that augmenting units deployed in support of theater air operations can be employed as effectively as those currently in the theater. To close this gap, we recommend that USAFE undertake two general policy initiatives regarding COBs: (1) improve the management of all currently programmed activities directed toward upgrading the capabilities of the COBs as a system; and (2) develop programs to evaluate, test, and exercise all elements of the operational and support systems that will be used

during wartime. These initiatives will increase the confidence of all participants in the ability of the COB network to support NATO and USAF objectives.

We break our recommended policy initiatives down into specific recommended actions in each of four major operational task areas: deployment, employment, readiness, and management as follows:

- **Deployment**

- Stabilize COB unit assignments.

- Establish criteria for using Air Reserve Units in the Air Order of Battle to minimize COB exercise turbulence due to changing beddown assignments.

- Reexamine the distribution of reception duties among the in-theater MOB wing sponsoring each COB, the host nation, and the augmenting units.

- Practice simultaneous multi-unit deployments with occasional diversion exercises.

- Conduct exercises on short notice or without notice.

- **Employment**

- Upgrade and exercise both command and control and logistics communications networks.

- Integrate standardized data automation equipment and procedures from the CONUS into theater operations.

- Improve storage and maintenance of prepositioned procurement packages (P³) for common support equipment.

- Exercise logistics support operations for all items-- consumables (POL and ammunition) and spares at all COBs under expected wartime requirements for sustained operations.

- Develop and test survivability standards and programs during exercises.

- **Readiness**

- Establish a central organization to evaluate and exploit the after-action reports written by augmenting-unit commanders following exercises.

- Devise a method for systematically communicating and retaining

Devise a method for systematically communicating and retaining deployment experience and learning among and within units. Develop realistic standards for measuring the readiness and monitoring the status of unoccupied COBs and the units they will receive.

- Management

Insure that a single management organization is responsible for COB resource allocations, priorities, and performance goals.

Define the "COB system" to include the COBs themselves, the augmentation units and equipment, and the support infrastructure unique to the COBs.

Insure that the COB management units tasks are defined with enough precision and coherence to preclude conflicting or contradictory incentives.

Develop one reporting system for the state of COB development and another with different standards for the capability of the bases and augmenting units to conduct wartime operations.

GLOSSARY OF ACRONYMS

AAFCF	Allied Air Forces Central Europe
ACELIP	Allied Central European Longterm Infrastructure Plan
ADVON	Advance Echelon
AF North	Allied Forces, Northern Europe
AFR, AFRES	Air Force Reserve
AF South	Allied Forces, Southern Europe
AGE	Aerospace Ground Equipment
AIS	Avionics Intermediate Support
ANG	Air National Guard
AOB	Air Order of Battle
ARF	Air Reserve Forces
ATAF	Allied Tactical Air Force
ATOC	Allied Tactical Operations Centers
BOS	Base Operating Support
CBR	Chemical-Biological-Radiological
CERT	Communication Electronics Readiness Team
CHOP	Change of Operational Control
CINCUSAFE	Commander-in-Chief, United States Air Forces in Europe
COB	Collocated Operating Base
C ³	Command, Control, and Communications
COMAAFCF	Commander, Allied Air Forces Central Europe
COMBU	Containerized Maintenance Building
CONUS	Continental United States
DOC	Designed Operational Capability
EDS	European Distribution System
EIFEL	Electronic Information Command & Control System for the Air Force (Luftwaffe)
EOF	Essential Operating Facilities
ESP	Exercise Support Plan
FOL	Forward Operating Location
ISO	International Shipping Organization
JCS	Joint Chiefs of Staff

JSP	Joint Support Plan
LOC	Lines of Communication
LOX	Liquid Oxygen
MCP	Military Construction Program
MEF	Minimum Essential Facilities
MEI	Management Effectiveness Inspection
MINET	Movement Information Network
MOB	Main Operating Base
MOU	Memorandum of Understanding
NATO	North Atlantic Treaty Organization
NEO	Non-combatant Evacuation Order
O&M	Operations and Maintenance
ORI	Operational Readiness Inspection
Phase IV	Computer Facilities Modernization Program
Post-Post	Post a transaction to the supply record after the event
POL	Petroleum, Oil, Lubricants
POMCUS	Prepositioning of Material Configured in Unit Sets
P ³	Prepositioned Procurement Packages
PROTAF	Project Task Force
SAM	Surface-to-Air Missile
SBSS	Standard Base Supply System
SOC	Sector Operations Center
SPO	Systems Program Officer
TA	Technical Arrangement
TAC	Tactical Air Command
TAF	Tactical Air Forces
TASMO	Tactical Air Support of Maritime Operations
TDY	Temporary Duty
TPFD(L)	Time Phased Force Deployment (Lists)
TRCT	Tactical Record Communications Terminal
USAFE	United States Air Forces in Europe
WMP	War and Mobilization Plan
WRM	War Reserve Material
WSK	War Readiness Spares Kit

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I. INTRODUCTION

The Collocated Operating Base (COB) program is a critical element in the wartime capability of U.S. air forces committed to the support of NATO. While not new--the COB program was initiated in the late 1960s--it has had a long period of development and is still experiencing some growing pains. This Note describes the results of research undertaken at the request of CINCUSAFE that examined several of the policy, managerial, and training issues influencing the current effectiveness of the COB program.

The research was organized around four tasks:

- Assess the current status of the COB system of air bases in Europe.
- Evaluate the capability of the COBs, especially their ability to generate and sustain wartime sorties.
- Identify means of enhancing the combat contribution of the COBs.
- Identify actions that could improve the wartime readiness of COB-related resources.

To put our findings on these tasks in context, the Note begins with a section on the background of the COB program and its operation. Section III describes the issues and our findings on them and covers topics related to deployments to COBs, employment and support of forces scheduled to be operated from them, readiness, and management of the COB program. The Note concludes with a section on appraisal and recommendations.

II. BACKGROUND

THE COB CONCEPT

A major responsibility of the United States Air Forces in Europe is to receive and support CONUS-based air power resources of the U.S. Air Force in such a way that they are readily available to augment in-place forces in a timely manner to support NATO. When properly bedded down, such forces provide the air component commander (COMAAFCF) with a plausible deterrent force and a well-postured war-fighting capability. The in-place air forces are postured on a fully developed network of Main Operating Bases (MOBs) concentrated in the Central Region and in the United Kingdom. The placement of these MOBs has evolved from the political, economic, geographic, and military realities that faced force planners during the 1950s and 1960s.

During the decade of the 1950s, NATO's defense strategy relied heavily on massive retaliation, which emphasized the nuclear strike mission. Both NATO and USAFE had plans to base large numbers of strike aircraft (fighter and medium bombers) in the European theater area. During the latter part of the fifties such basing plans were modified because neither the alliance nor the United States would finance the building of the MOBs and infrastructure required to bed down the strike force planned. Neither would the alliance or the United States build the planned number of aircraft. Parts of the existing strike forces were moved from Europe and Africa back to the United States.

The main causes of the massive rebasing of USAF aircraft in Europe, however, were political. In 1954, Norway and Denmark passed legislation forbidding the permanent basing of foreign forces on their soil. In 1966, under the leadership of DeGaulle, France withdrew from the integrated military structure of NATO and directed the removal of all USAF aircraft by the spring of 1967. NATO changed its official strategy from massive retaliation to flexible response during the sixties, placing additional emphasis on conventional forces and thus increasing the requirements for effective tactical air forces. The result of all these policies was that all tactical forces, including both those in the

theater and those arriving as reinforcements, had to be based primarily in Germany and England. Thus, with the contraction of the basing options and the impending concentration of all tactical aircraft on a few bases, vulnerability had to be addressed. In the USAF Basing Study dated October 31, 1966, new options were developed and the COB concept surfaced. It required the joint use of available NATO host country bases for the reinforcing aircraft.

In 1970, the Secretary of Defense authorized DOD to begin negotiations for the initial COBs to supplement the MOB basing structure. Enough bases were required to bed down almost 60 percent of the force that is planned to be in the theater by day M + 30. MOB/COB beddown of FY85 forces is shown in Table 1.

IMPLEMENTATION

By the early seventies, when the principle of co-use of the bases had been agreed to by the NATO countries, the United States negotiated a series of bilateral Memoranda of Understanding (MOUs) with each of the countries in which COBs were to be developed. Bases were selected from the set available in each country so that the augmentation forces could be postured to fight effectively against the perceived threat to NATO.

Table 1

BEDDOWN OF USAFE FIGHTER/RECCE FORCE

Aircraft	Percent Beddown on MOBs	Percent Beddown on COBs
F-4	36	64
F-15	33	67
F-16	50	50
F-111	82	18
A-7	0	100
A-10	25	75
F-5	100	0
RF-4C	55	45
EF-111	11	89
Overall	38	62

The MOUs provided for the use of the selected bases and authorized the USAFE and the host nation's defense forces to determine the facilities to be provided at each of the selected bases through a series of Technical Arrangements (TAs), one for each base. Such negotiations have continued since the early 1970s, reflecting changing needs and political conditions.

The progress of basing agreements is shown in Fig 1. The MOBs are shown as open circles. Countries with MOUs in effect are shaded; bases for which TAs have been completed are shown as solid circles. Most of the bases in AF NORTH and AF SOUTH are COBs and are critical to any total NATO strategy.

The successful completion of the COB program negotiations is in itself a major endeavor of USAFE, but it is only a part of the work that is needed to make the COBs a part of the operational and logistical network of USAFE bases in Europe. Early in the program of COB development, the participants defined specific Essential Operating Facilities (EOF) for each base; these are shown as in Table 2. Because of the uneven development of available facilities on the total set of bases, however, USAFE decided, and the NATO participants agreed, that the emphasis should be on the provision of specific Minimum Essential Facilities (MEF) at each base. These MEF included parking for one squadron of aircraft with 150 ft spacing and the provision of seven days' storage for the fuel and ammunition needed for the augmentation aircraft planned for the base. Current NATO funding efforts are directed toward completing the MEF for all bases by FY 91.

USAFE's approach to incorporating each COB into the support system fully exploits the resources in the MOBs. Each COB with a TA has a sponsor MOB assigned to interact with the host unit and define areas of cooperation in operations and logistics. Such areas of agreement are included in a Joint Support Plan (JSP), which specifies the responsibilities of the host, sponsor, and augmentation units. As of 1 March 1986, 43 of the COBs that have signed TAs also have approved JSPs.



Fig. 1—NATO basing agreements and COBs, 1984

Table 2

ESSENTIAL OPERATING FACILITIES

- *Dispersed Parking
- *Munitions Storage
- *POL Storage
- Runways
- Taxiways
- Maintenance Facilities
- Semi-Hardened Squadron Operations
- LOX facilities
- Taxi Tracks
- Lighting
- Airfield Associated Utilities
- Aircraft Shelters
- POL Truck Shelters

*Minimum Essential Facilities.

OPERATION

Although the JSPs have improved the interaction between the CONUS-based units and their beddown COBs in Europe, they cannot guarantee that the units can operate on a sustained basis in wartime. No one has specified precisely how these units are to be integrated into the ACE command and control system and into the USAFE logistic network. For example, planning to meet the C3 system's needs for survivability and redundancy is still undergoing change. Furthermore, plans for replenishing of consumables and spares are still more or less limited to functional designs that have not been tested or exercised.

Nevertheless, there is a growing confidence in the ability of the designated units to deploy and operate at the COBs. The Checkered Flag and associated JCS exercises have increased in number since the inception of the program in the late 1970s; Table 3 shows how these programs have grown and how more units are exercised at the COBs each year. The TAC exercises are for fighter units, both Air Reserve Forces and USAF, and the Military Airlift Command Volant Partners exercises are for the ARF, and are also based at COBs.

Table 3

USAF TACTICAL DEPLOYMENT TO EUROPE
(Checkered Flag, Crested Cap and Volant Partner exercises)

Year	Total	To MOBs	To Standby Bases	To COBs	Volant Partner (C-130)	Total COB
75	5	5				
76	9	7		2		2
77	12	2		10		10
78	14	4	1	9		9
79	11	3		8		8
80	13	4	2	7		7
81	16	2		14		14
82	15	2	1	11	1	12
83	18	2	1	12	2	14
84	24	3	2	16	3	19

Such exercises have been considered uniformly successful. Tactical aircraft augmentation units believe the current COB exercise program is a major improvement over past operations. Units can train for deployment to a generally fixed overseas base and environment. To the extent that such stability is militarily and politically possible, it seems to be the keystone of the current COB program.

THE FUTURE

USAFE recognizes that full stability in beddown provisions and COB status can never be achieved. Bases with only the MEF must be continually upgraded or replaced to improve the operational utility and survivability of the COB system. In this regard, USAFE has developed follow-on upgrades to the MEF that are included as program elements in the ACELIP (Allied Central European Longterm Infrastructure Plan).¹ These include hardening of command posts, building aircraft shelters, hardening communications links, and upgrading parking aprons and access

¹Allied Central Europe (ACE) plan for the allocation and spending of NATO infrastructure funds.

pavements. The program also includes developing priorities for allocating available funds to regions affording the best COB payoff.

The COB program has been developed and upgraded slowly but measurably. The question remains whether this pace is adequate and can be sustained or quickened. In the next section, we identify issues concerning the overall European reinforcement program and suggest some improvements. In the concluding section we recommend some broad program initiatives that the USAFE staff should consider.

III. ISSUES AND FINDINGS

As noted earlier, many of AAFCE's war-fighting aircraft would deploy to Europe from the CONUS. It is vitally important that these aircraft be able to quickly produce the sorties that are planned for them. Our observations of the management structure--the reporting system, the standards for operation (or lack of same), and the diverse characteristics of the COBs themselves--suggest that achieving the planned sorties may be difficult. Our opinions are based on interviews at Hq USAFE and Hq TAC, plus limited observations of deployment exercises. We observed COB operations and potential capabilities through two 1984 Checkered Flag exercises, Coronet Packer and Coronet Buccaneer. These exercises afforded us the opportunity to identify both local and generic problems. We have been influenced by perceptions of the organizations associated with the deploying of units to COBs and with planning operations conducted there.

In the following sections we examine current COB status and planning in the context of *deployment* of CONUS forces to the COBs, *employment* of the forces at the COBs, the *readiness* of the COB network, and the overall *management* methods for enhancing, controlling, and evaluating the COB system.

DEPLOYMENT ISSUES

Effective Sponsorship

From the management and policy standpoint, the USAFE staff is structured to develop programs and solve problems by functional area. At the time of our study, it did not appear to have a standing agency that monitors status, sets standards, evaluates exercises, and reports operational readiness for COBs. Neither does TAC, which is responsible for training and deploying COB augmentation forces. In TAC, the emphasis is on unit capability and the orchestration of mobility resources. Furthermore, in neither TAC nor USAFE is there an organization that attempts to evaluate the *joint* capabilities of COBs and their assigned units.

Because USAFE has only a small staff at headquarters, the responsibility for managing the COB program has been shared with the in-theater wings. Headquarters USAFE has negotiated and defined host-nation Memoranda of Understanding and Technical Arrangements. The development of detailed Joint Support Plans has been assigned to in-theater wings in conjunction with the designated augmentation units. Each such wing has become the "sponsor" of a COB because of its in-theater proximity and its wartime role of providing a support base for the deploying unit.

The wing commander of a sponsor base is charged with the responsibility for organizing and manning a reception team for each COB assigned to him for sponsorship. He also serves as the conduit for administrative and logistic support. Obviously, these duties are secondary to those of operating his own wing-base complex. Performance incentives clearly lie with the latter. Additional personnel assigned to the Wings to support the reception of augmenting units have usually been absorbed to support Wing operations. Thus, standing organizational elements committed to sponsoring COBs have not been maintained, and as the originally assigned personnel have left, commitment at the individual level has also dissipated. Without these committed elements, wing commanders have understandably given uneven emphasis to the various COBs they sponsor and possibly a lower priority to managing COB as a whole than is required for such an important element of NATO force structure.

Given conflicting incentives, what is necessary for effective COB management and reception at the lowest level, and what alternatives are possible?

The COB sponsor role requires elements of management, manning, and functional breadth. The sponsoring elements must be in the theater and must provide the on-the-spot management and range of skills necessary to ensure that augmentation units are trained and supported for movement to and continued operation from their COB. In the present dispersed arrangement, the management and support staff are distributed among the sponsor wing, Hq USAFE, the augmentation unit, and the host--each of which has different objectives.

A USAFE agency for supporting the COB structure would provide a better focus for system activation. Such an organization need not be located at HQ USAFE, but it must have appropriate staff support and oversight authority. These organizations could be provided with a staff whose sole task would be to ensure the maximum operability of the COBs under its purview. They would provide continuing advocacy of COB enhancement programs and continuously manned reception teams targeted to single COBs and corresponding host bases ready to integrate into the staffs of the augmentation units. Such teams might be smaller than the current reception team standard, possibly as few as five people and certainly less than the "optimum size" of approximately 30 suggested in USAFE P-28-2.¹ The quality of the team could be improved if roles were combined to make the team collectively responsible for all reception tasks. With continued exercise programs, some reception tasks might be transferred to the augmentation unit itself. (Even with such an arrangement, the augmentation unit would have to depend on Hq USAFE expertise for post-CHOP--Change of Operational Control--logistics support, e.g. taking advantage of the European Distribution System--EDS--and the designated MOB for communication and resupply interfaces with the USAF logistic system.)

A centralized COB program staff could monitor readiness and provide status updates for all COBs, their requirements, and limiting factors. It could also translate COB requirements into a prioritized list of fiscal and programmatic actions. Timely status information would permit adjustments to the Military Construction Program and NATO-slice funding actions to ensure that they would be used to enhance the COB network as much and as coherently as possible. For example, communication shelters or equipment bunkers would not be programmed for bases that did not have--or were not programmed to have--an appropriate balance of other essential facilities.

The cost of a centralized COB reception management staff might be larger than suspected, since it would have to draw on Base Operating

¹Annex U, Reception in USAFE Command Guidance for COB Sponsor Unit Support Planning, USAFED 28-2, dated 30 September 1983.

Support (BOS), plus sufficient Temporary Duty (TDY) support if it is to be responsive. If centralized at an existing Air Force installation, however, the true marginal cost might be negligible.

Stability

Since planning for deployment is tedious and time consuming, there is a great need for stability in assigning each arriving unit to a given COB. Stability permits units to plan for and tailor their training programs to specific localities, facilities, and host-nation interfaces. Stability has motivated both regular and Air Reserve Force units to take some of the initiative in deployment planning and practice.

However, the benefits of a stable unit/COB relationship are often perturbed by changes to the War and Mobilization Plan (WMP) and Time Phased Force Deployment (TPFD) that result from political or mission assignment factors and worldwide force-change requirements. Such events can cause up to a 10 percent change in COB beddown assignments a year, resulting in replanning and loss of accumulated unit experience. Because deployment can be practiced by any given unit only about once every three years, changes are troublesome and counterproductive. Planners should therefore consider alternative strategies for COB beddowns before changing COB/unit matches.

Some alternatives are readily apparent. For example, COBs could be classified as air-to-ground or air-to-air bases. That would permit reassigning aircraft from one base to another of the same type without juggling mission assignments. (Dual-role aircraft such as the F-16 would be assigned to base complexes having the most developed POL/ammunition support facilities.) The host-nation base would also be supporting the same mission. There would probably be more flexibility in designating air-to-air bases; munitions storage and buildup requirements would probably limit the number of bases that could support the air-to-ground mission. In either case, stability of mission would mean stability of important communication interfaces to both USAFE and NATO for mission tasking.

Another possibility would be to maintain current base role assignments, but use tanker aircraft to increase the range of the retained mission aircraft. Tankers would thus allow stable COB

assignments while promoting responsiveness to changing threats and political situations.²

Other Considerations

Recent exercises have raised several issues that should be addressed if the COB program is to be enhanced. Not all are of equal importance, each can contribute to the ease and effectiveness with which augmentation squadrons can be integrated onto the COBs.

A JSP describes the conditions that the augmentation unit expects at a COB. It also details the responsibilities of the host, the sponsor, the command structure and the augmentation unit. Each plan is the joint product of representatives from participating entities. The sponsor unit has the responsibility for producing the plan, even though it does not provide complete support for each section of the plan. Many details are left to the host and the augmenting unit. Plans are formulated, reviewed, and approved primarily as the result of efforts of Site Survey Teams from the augmentation unit and the sponsor. In many instances, deploying-unit representation is limited by owning-command policy on TDY travel; it limits the number of participants and therefore the range of skills needed. This shortfall is particularly troublesome in the logistics area. We know of no team on which supply, maintenance, transportation, munitions, and equipment sectors were all represented. We believe these limitations are short-sighted.

Equally important is the participation of the COB host, which has the most knowledge of the operation of its base and has the best corporate memory of past exercise experience. Continuity of host personnel is of particular importance when one considers that, on the average, both the augmentation and sponsor wings have a complete turnover of personnel every three years. (This is not true of Air Reserve Force units, especially their communication elements.) The host can also make sure that the JSP provides specifics about the NATO Command structure to the augmentation unit.

²Fighter-bombers based in Denmark or southern Norway could be tasked to missions in northern Norway if they were provided with tanker support to enable them to reach and recover from such distant targets.

Reception-team tasks are time-critical and require precise orchestration with limited resources when the entire deployment process is in its most critical phase. Reception team tasks do not seem to be defined in a time-sensitive manner or ranked according to any standard set of priorities. Each exercise appears to have unique problems that are solved ad hoc. This is a peacetime luxury that may not be acceptable under wartime conditions when both personnel and unit changes may occur. Plans to formalize all reception-team tasks should be developed base by base. While they are generally not complex for the team specialists and host participants, such tasks may appear insurmountable to a unit whose personnel have not been through them on a regular basis. Here again, the ARF may have a comparative advantage.

With respect to time-criticality, augmentation units could have profited from having had host-language-proficient persons on the ADVON (Advance Echelon) or available to the staff decisionmaking personnel. The total Air Force-wide requirement for such persons would not be large, and they could materially ease the reception process. If they were centrally assigned to the COB staff (suggested earlier), they would always be available and could readily maintain both their language and functional skills. If assigned to the augmentation wing, their longtime utility would probably diminish because they would only be in the theater during exercises.

Testing

The COB structure has never been exercised as a system or a cohesive network and has seldom been exercised on short notice or without notice. Obviously, a system test is unlikely during peacetime and would be very costly, but some no-notice tests of a few bases and units--or even a single base and unit--could be used to identify difficulties that might be associated with an unplanned system implementation. Such tests would put a range of pressures on all participants--the augmentation units, the sponsors, the hosts or hosts and implementing national headquarters and NATO staffs. No-notice testing would afford a more realistic measure of expected wartime performance of the COBs and useful diagnostics for corrective action.

For example, if degradations are caused because of planning and execution shortfalls and cannot be remedied, the basic assumptions on which planning rests must be reexamined.

Augmentation units would be variously affected. Depending upon each one's perception of readiness and the time from last deployment, there would be difficulties with (at least) availability of equipment and spares, mobility bags, personnel availability, and aircraft readiness. Without the prolonged preparation period (up to a year) associated with the current Corona, Checkered Flag, and Crested Cap deployments, the augmentation units may well not be as responsive and as capable as plans require. What if there is a shortfall of airlift? What are the priorities of the support serials and the sequencing of critical equipment and personnel loads? What size unit could be supported with each stepwise reduction in lift? What effect would different types of transport have on upload and offload? How might closure times be affected? How must joint planning be revised among TAC, MAC, and SAC? Such questions may seemingly be addressed during Command Post Exercises, but until actual movements are made, real problems in moving and sustaining the force may be underestimated or remain unidentified.

Sponsor organizations could experience similar unexpected stresses under both no-notice or full-system exercises. Multi-COB activation would put serious stress on all reception team personnel, particularly if there was little warning. Sponsor bases would be required to send personnel, add supply accounts, move predirected munitions, provide transportation, prepare P³ for shipment, and supplement equipment for incoming augmentation units. Doing these tasks for each of their COBs plus mounting and sustaining their own wartime missions may not be possible for any sponsor Wing with present manning. The wing staff would be especially hard pressed to define priorities if it was also evacuating noncombatants.

The host unit would probably be least affected by either of the above exercises. It does not normally use the physical facilities assigned for COB operations and has consumable supplies and participates in communication nets to sustain its own intended wartime role. However, the deployment operations of the augmentation unit may cause

serious temporary operational dislocations at the host base. The host would be receiving communication and air traffic different from what it normally receives. Communication backlogs might increase markedly. Transports, possibly wide-body ones, and deployment aircraft might obstruct taxiing and parking throughout the arrival and might even shut down flight operations.³ These operations might also tie up key operations personnel to ensure proper beddown of the augmentation unit. It is also possible that the host would be responsible for other off-base COB operations, requiring knowledgeable persons to disperse at a critical time. Short-notice exercises would allow true estimates of the COB effects on host operations.

EMPLOYMENT ISSUES

Employment issues address the wartime utility of the COB system more explicitly. Given that additional squadrons of tactical air power can be established at theater bases, can support and control systems employ and sustain such units? The answer depends in part on the design of the Minimum Essential Facilities that planners have specified for COBs. From the exercises that we observed, it is not possible to completely assess the effectiveness of the MEF. Aircraft can certainly be deployed to and launched from COBs, if POL is available. But questions remain as to how effectively units can be tasked and controlled, and whether supplies, equipment, and facilities will be sufficient to sustain sortie rates on a scheduled basis. Overarching all these considerations, of course, is whether the deployed forces can be protected or dispersed enough to survive hostile action.

Planning and Shortfalls

While JSPs describe the operating environment for arrival and initial operation of augmentation units with great detail, they do not explicitly deal with sustained operations. Most of them do not provide for continued operations under contingency conditions. It is important that the JSP at least provide for reports that show a continuous picture

³Where strategic parking ramps are not available (which is true of most of the COBs) wide-bodies must park on the runways to unload, thus closing down flight operations.

of COB operational limitations and potential to all levels of the USAFE Command structure.

With no plans for sustained operations, site survey and ADVON personnel will have to adapt to the conditions that they find or anticipate and to any limitations of the airlift provided in a war or crisis. If, for example, all equipment and personnel cannot be lifted at planned rates or in the appropriate sequence, possible shortages will have to be identified and theater resources earmarked and made available to sustain operations at some level. The augmentation unit must also be prepared to adapt to resource shortfalls in terms of airlift, theater-supplied fuel and munitions, and resupply of spares. Opportunities for self-help in all these areas will have to be identified and acted upon. Estimates of shortfalls in resources can be made by comparing War and Mobilization Plans for support with deployment plans suggested by the Time-Phased Force Deployment Data.

Communications

The exercises that we observed were not true tests of the adequacy or survivability of the command and management links to the COBs. Not all planned wartime equipment and circuits were in place, nor were the exercise communications arrangements the same as would be used for wartime. Sortie tasking to one COB came through voice circuits to a host-country NATO facility, which acted as the Sector Operation Center for the exercise; in wartime, tasking would flow through NATO channels and (in Germany) be received over the EIFEL network. One deployed squadron had direct telephone communications to its home base by means of a direct line to its USAFE support base plus a patch to Autovon. It is unlikely that such support would be available in wartime; among other things, Autovon might be jammed with more essential traffic. Also, several special circuits (especially telephone) were in place just to support the exercise deployment. Finally, it was indicated to us that a COB deployment does not create heavy enough tasking to affect the logistics flow, so a COB deployment is a poor predictor of the volume of wartime communications.

Nevertheless, both on-base and off-base difficulties were apparent. Most of the communications problems at one deployment related solely to the exercise circuits. These are normally procured especially for the exercise (starting at 90 days prior to deployment date) but paperwork difficulties resulted in the circuits not being in place at exercise time. Thus, for a time, telephone connections were routed through several switchboards, some of which were manned by host-country non-English-speaking personnel. There was a difficulty with bringing up the DCT-500 equipment for entering transactions into the supply computer at the support base; the equipment had been received in damaged condition, and there was several days' delay in getting a civilian technician to repair it. As a result of this delay, initial supply recordkeeping had to be done manually. The 300-baud teletypewriter circuit for entering administrative traffic into the Autodin network was delayed several days because of problems at the Autodin switch on which the circuit was homed. In one instance, the Communication Electronics Readiness Team (CERT) had not fully checked out the leased lines or the communications trailers. System readiness could not be certified to the communication elements of the deploying units. In addition to these terrestrial circuit problems, delays in receipt of frequencies and callsigns made it impossible to bring the high frequency radio communications up promptly.

Such exercise-related communication problems suggest areas to which fuller attention could be devoted by exercise and reception planners and by the in-country support teams.⁴ If the communications support for an exercise were to function smoothly and completely from the first day of deployment, it would assuredly increase confidence that wartime communications would function more smoothly, although it obviously does not and cannot address wartime communications survivability.

One means of facilitating smooth communications is to pay adequate attention to radio frequency assignment. It is clear that air operations cannot function without radios. Something is always being said over the radio with regard to coordination, locating people,

⁴It is important that exercises be held at diverse locations, because communications problems are likely to vary considerably with the country and the COB.

getting something moved somewhere, getting something located, etc. Given such a dependence, frequency assignments (and the corresponding crystals) for on-base radio networks require close coordination and careful planning.

Tasking

Unit tasking is accomplished during wartime for the Allied Tactical Air Forces through the Allied Tactical Operations Centers (ATOCs) and Sector Operations Centers (SOCs) in Europe. Such tasking would require the ATOCs and SOCs to assign missions to units in support of the area tactical air battle. This could result in assigning recently deployed aircraft units and types to roles for which they have been neither trained nor equipped. This would be particularly true of AFRES units, some of which fly aircraft not in the ATAFs' peacetime order of battle. Mistasking could therefore occur because the ATAFs probably lack the standard conventional load information peculiar to such newly assigned aircraft as the A-7s or F-4Cs or mission specialists familiar with them. Mistasked units could be assigned roles for which they have no utility or that cause them to incur unusually high losses. ATAF staffs must include specialists in all the weapon systems scheduled for their orders of battle, including systems that arrive with augmentation units.

Computers

Augmentation units may use the standard USAF (or TAC) microcomputer to accomplish many routine recordkeeping and scheduling tasks on normal peacetime CONUS bases. These computers become embedded in the day-to-day operations of the units and are considered for deployment whenever mobility plans are formulated. On exercises, where less than full-up movements are scheduled, workarounds are employed. The units operate on a post-post or manual mode for processes normally automated.

Augmenting units have thus not done the detailed planning to employ computers in sustaining wartime operations. Many systems will not function on standard European power supply systems; they have not been packed and shipped during mobility exercises, so ruggedness in field operations is not adequately known. Not all have been protected from electronic eavesdropping. Wartime use of these computer aids needs to

be examined and tested, as well as any communication requirements implied by their presence.

Survivability

The Air Force is committed to the use of COBs as beddown bases for all augmentation forces in the European theater because they are considered more survivable than any other practical alternative basing strategy. COBs, besides having point defenses, are protected by NATO's air defenses and the Hawk and Patriot SAM belts in the ground forces. COB host-nation aircraft are usually sheltered, and shelters are planned for many of the augmentation aircraft. Nonetheless, augmentation-unit locations could be made more survivable.

Survivability is not specified as a consideration in the tasks outlined in USAFE P-28-2, *COB Sponsor Unit Planning*, which outlines the contents of the JSP, although the document does consider chemical, biological, and radiological (CBR) protection. Thus none of the participants in planning for augmentation units is specifically required to consider methods of enhancing the units' survivability. Certain things such as tone-down and camouflage are obvious to the host, but they are not practiced during exercises. Exercises are designed to deploy units, familiarize personnel with the operating environment, and fly a rigorous training program. Base operations are oriented toward convenience in procedures and high throughput to sustain exercise surge rates. Exercises do not replicate wartime operations.

Units in exercises are aware of important survivability concerns and appear to actively consider and develop alternative physical layouts that would reduce overall vulnerability. However, these measures are generally ad hoc and are not employed systematically. For the deployments we observed, suggestions (from the units) to reduce overall vulnerability included the following:

- Disperse tent cities or personnel quarters both on and off the base.
- Disperse (and harden if possible) WRSKs and support equipment into bunkers or areas remote from expected targets.

- Locate critical test stations and repair equipment (AIS) in protectable off-base sites (warehouses/garages).
- Move the TRCTs (communications shelters) away from obvious targets such as command bunkers.
- Disperse nonbunkerable munitions and missiles onto nearby roads and fields.

All these ideas originated with observant and thoughtful personnel. They were not provided with criteria of any type to assess improvements in wartime survivability. Neither has there been an assessment of the effects of survivability improvements on the sustainable sortie rate. We suggest that assessment tools be developed and put into use by the Site Survey Team and be mandated by the JSP and practiced by means of exercises. Assessments would be based on the wartime layout proposed by the augmentation unit, including the siting of all critical resources. The layout could then be provided to a Wing operations representative who could select aimpoints, simulate weapons, and estimate damage effects. The layout could then be rearranged and reassessed until vulnerability is reduced to a reasonable minimum. Such an assessment program would provide the augmentation-unit commander with a set of options regarding the placement of his deployed resources. It would also provide all relevant commanders and their superiors with realistic estimates of wartime operational mission rates.

For example, the Tactical Record Communications Terminal (TRCT) is usually located next to the Command Bunker during deployments. The reason for this is that most of the TRCT's communications are with the Command Bunker. If it is assumed that the bunker is a potential high priority target for attacking aircraft, the probability of survival (P_s) of the TRCT, as a function of its distance from the Command Bunker, is shown in Fig. 2. This figure is based on two aircraft attacking the Command Bunker each carrying four bombs, using a computerized delivery system, 15° dive angle, and a 2000 ft release altitude. This figure shows the results for the TRCT being in or out of the axis of attack. During deployments, the TRCT is nominally 20 to 50 ft from the Command Bunker and thus has a probability of survival of less than 50 percent

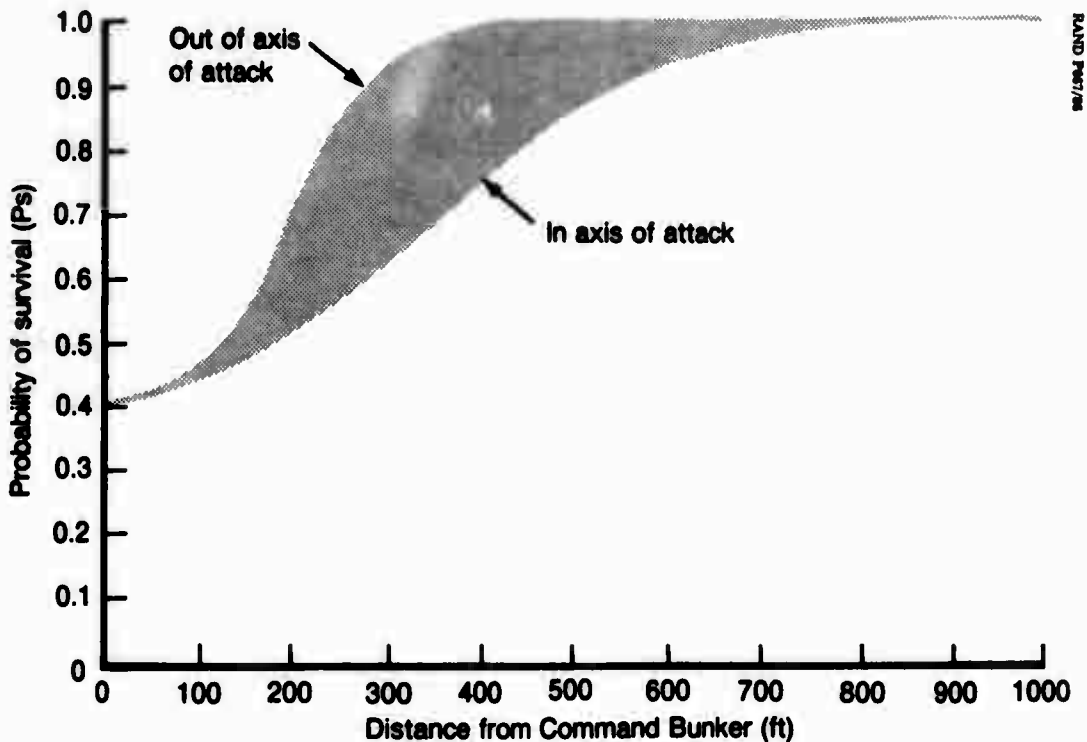


Fig. 2—TRCT survivability

(for the attack postulated). If the TRCT were located about 600 ft from the bunker, the P_s would increase to over 90 percent, even if the TRCT was in the axis of attack. This increased separation might mean more time in getting messages between the Command Bunker and the TRCT, but it would substantially increase the survivability of the terminal.

Standard approaches to increasing survivability are to harden and to disperse. Each has real costs and limitations. Runways generally cannot be added to COBs because of real estate limitations. Hardened aircraft shelters and other bunkers are expensive and are slow to program with either the MCP budget or with NATO slice funds. However, such other alternatives as the following can be programmed as part of the minor construction and procurement elements of the O&M budget:⁵

⁵These alternatives might also be used as mobile base building blocks in other theaters of operation.

- Portable International Shipping Organization (ISO) containers for the shipping and storage of munitions.
- Rubber fuel tanks and storage bladders with associated pumping and hydrant systems.
- Containerized Maintenance Buildings (COMBU) for munitions buildup and the dispersal of intermediate maintenance shops.
- Precast concrete sections for rapid runway repair and parking and ramp buildup.
- Enhanced Harvest Eagle sets--bare equipment sets.

Because survivability includes CBR defense, an integrated program of detection, warning, protection and decontamination needs to be developed in collaboration with host units. Base operations cannot be continued unless both host and augmentations operate cooperatively in such a program. However, in both exercises that we observed there were limitations on cooperation. In one instance the host planned to abandon the base, and in the second the host procedures were never translated into English. Clearly much improvement is needed.

Prepositioned Procurement Packages

Planning for the P³ program explicitly considered the advantages of having support equipment available in the theater where it was to be employed. The program was justified for the same reasons that were used to support the Army's POMCUS operations. That is:

- P³ support equipment is usable across units.
- Repositioning bulky and heavy equipment eases the requirement for scarce airlift at critical times.
- P³ sets can be reconfigured on short notice.
- P³ incorporates locally manufactured transport and support equipment into the inventory. This reflects the reality of available support, especially maintenance, in the theater.

Despite the obvious benefits, a few problems remain that must be treated over both the long and short term with respect to P³. They include storage, maintenance, modification, and program updates.

Obviously the best place to put the P³ sets is at the point of use, if they could be protected from the weather and are secure. At present this is not possible because of a lack of protected storage space at most COBs. This is not likely to change over the near term because of the lack of national construction appropriations and NATO funding. Nonetheless, the growing inventory of P³ items needs to be stored and maintained at a high state of readiness.

P³ managers have considered the obvious options: leasing commercial storage space and storing the materiel on USAF bases or previously employed COB sites. Additional sites could be considered, such as Army and NATO sites in Luxembourg and Belgium. The problem remains that storage away from the point of use requires that P³ be transported--possibly for long distances under pressure of mobilization, which may be difficult for the sponsor, the host, or the augmentation unit.

In the absence of storage space at COBs, P³ managers should give some thought to organizing the P³ into tailored unit sets. That is to say, the P³ should be segregated by augmenting unit and COB. Thus, each unit would know precisely the amount, type, and condition of the support equipment that will be available to it upon deployment. This would reduce the amount of mobility package tailoring that each unit does for each deployment, and allow the unit to achieve closure more rapidly.

Currently, "circuit-riding" USAF personnel maintain and modify P³, but as the P³ program grows and the materiel is dispersed, requirements for manpower and funds may grow beyond acceptable limits. The use of contract or host personnel should be investigated. Arguments concerning their reliability in wartime are not germane since P³ maintenance and inspection is essentially a peacetime task; wartime maintenance can be done by the using augmentation unit. The criteria for choosing a maintenance approach should be limited to reliability, technical capability, and relative cost.

As the P³ concept matures, constant attention needs to be given to keeping the program items technically current and efficient, adding new items to the list, and considering whole new functions for prepositioning: e.g., medical, messing, food processing, computing, and communications. The savings in airlift and the reduced closure time that prepositioning would buy can be evaluated in terms of sorties produced or other readiness measures. (Certainly, management of the prepositioning must explicitly consider such operational implications.)

Local Civilian Labor

The COB concept presupposes a given level of readiness and ongoing activity by the host nation at each COB. Support provided beyond this minimal level is broader and more responsive at bases in the Central Region than at those on the flanks. For example, the Central Region bases can rely on commercial resources to provide industrial products and rare gases (e.g., argon) much more easily than those on the flanks. However, local purchase of such resources and the use of technical support (for telephones, computers, etc.) are not practiced during exercises. They should be, for the same reasons that justify the P³ concept, notably minimizing airlift demand.

On the flanks--e.g., Norway, Turkey--industrial support (even prime power supplies) may be totally lacking and the only available resource may be local nontechnical manpower. Even this resource can be exploited; USAFE should find out how to substitute local for deployed-unit personnel to perform such jobs as cooking, base maintenance, and material handling at all COBs. Any savings in deployed manpower will translate into reduced personnel overhead and support services. As relationships between COBs and augmentation units stabilize it will become possible to define operations tailored to specific COB-unit pairs that can be carried out by local manpower. These need to be identified and examined. To the extent that this can occur, the burden on the sponsor unit will be diminished and deployment effectiveness can be increased.

Munitions

Current exercises do not test either the supply or the distribution of munitions needed to support deployed augmentation units. Managing theater munitions was a problem before the development of COBs and has remained one. COBs have merely added to the problem by requiring that stocks be distributed to and replenished at many more locations. As a consequence of this requirement USAFE has tried, where possible, to place munition stocks in available bunkers nearest the expected point of consumption. Since COB storage capacities are limited and sometimes nonexistent, planners have developed time/distance/storage criteria to help decide how to use available bunkers. Thus, bunkers at one COB may be used to store munitions for other than the augmentation unit at that COB if those bunkers happen to provide the minimum transport time between the munitions stored and their point of use.

Considerations other than quantity-distance criteria affect munitions placement. Modern munitions must be tested and maintained to ensure usability and modification, and it is more economical to do this where munitions maintenance units are continuously available.

Other munitions issues that need early consideration include the following:

- COB onload-offload capabilities (availability of munitions handling equipment)
- Interference of munitions outloading (repositioning) with wartime operations
- Ability of augmentation units to bring munitions on deploying aircraft
- Reexamination of quantity-distance safety measures
- Effect of relaxed safety standards on wartime operations
- Plans for replenishment to match other sortie capabilities

While some of these points are continuously addressed, the essential overall systems view appears to be lacking.

Munitions managers also need to consider the criteria used by other COB support planners. Otherwise, COB readiness, for example, may be measured in different ways by planners making decisions impinging on it. Clearly, this can be counterproductive; such a potential conflict in purpose highlights the necessity for centralizing reporting and management decisions across functional areas in some sort of COB program office.

Fuel

Fuel should be available during wartime at least over the short term at most Central Theater locations. For COBs located on the flanks or at inactive bases, the storage and resupply of fuel may be a difficult wartime problem. Exercises planned with long lead times do not disclose the total scope of the fuel problem. We did not uncover anything not already known; however, specific problems should be restated.

- Weapon systems (aircraft plus armaments) may differ greatly in their rate of fuel consumption. Hence, matching weapon systems to COBs with some degree of stability is of critical importance. Seven days of fuel to support A-7 or A-10 operations does not equate to seven days of F-15 fuel for operations.
- Fuel throughput and pumping capacity should also be a major consideration when changes to beddown are needed.
- Enough fuel may not be available for both host and augmentation forces.
- A COB system-wide allocation approach is needed when fuel is short at any of the bases. Differences among the COBs in fuel requirements must be taken into account.

READINESS ISSUES

Augmentation forces differ from others in that they are geographically separated from their proposed operating bases and all their support infrastructures--e.g. logistics, command-control. The joint operation of the in-place and deployed resources is tested only during programmed Coronet or Crested Cap exercises. However, these exercises provide needed training to the units in the European theater, and they identify major limitations to the sortie generation process. However, because of funding limitations and peacetime political and environmental constraints, such exercises are never a true replication of the wartime operations at a COB. In this subsection, we examine the limitations of exercises as tests of system readiness. We also suggest supplementary approaches to ensuring COB readiness, including monitoring existing facilities and planning nonfacilities resource flows to support continued operations.

Exercises

Planning. Generally six months to one year is allowed for exercise planning. During the planning period, all the participants from TAC, USAFE, and the NATO host have an opportunity to organize resources, train, and schedule operations to meet the performance requirements of the exercise. They will be honed to a unique level of readiness. The exercise therefore demonstrates the capability, ingenuity, and professionalism of all the participating units, rather than the wartime readiness and utility of the COB system. The training and familiarization objectives are met and specific problems identified. All accomplishments and findings are documented in after-action reports.

After-Action Reports. Such reports, required after all exercises, are designed to describe both the accomplishments and problems encountered during the period of the test. They are prepared by the augmentation unit commander and include discussions of each of the major functions in detail. The quality varies from one to the next, but they all contain a log of key information about each COB. These reports are furnished to all participants and flow through the command structure of both the CONUS and USAFE. In most instances they appear to be read,

annotated, and passed for action to the functional components, which react according to their own view as to the reports' importance or currency. Thus, they may not be handled on a consistent priority basis across functions. No command organization is the overall action agency on after-action reports, and the further the reviewing command from the theater, the less attention the reports appear to receive.

In one sense, this attitude and response are appropriate, because the activities have been completed and new exercises need attention. However, if the focus were on the COB and not the unit, there would be continuing attention to COB upgrading and long-term remedies to problems. Unfortunately, no agency has the responsibility for drawing generic COB problems out of the reports. No agency has the authority or program responsibility for prioritizing or programming cross-cutting fixes for the COB system as a whole. There is not a specific program for using after-action reports to update JSPs or to identify issues that affect survivability and sustainability. These documents could provide a worthwhile basis for COB enhancements, if they were systematically utilized and exploited.

Cross-Telling and Information Transfer. New schemes for information distribution and the establishment of formal programs for sharing experience are needed to exploit the wisdom and effort reflected in the after-action reports and JSPs. One approach would be the use of video recording. Tapes of exercises could be produced to show the physical attributes of the COBs, including the location of facilities and the operation of COB resources in producing sorties for the augmentation unit. The tapes could show the methods of deployment and employment from beginning to end, highlighting problem areas and deficiency workarounds. They would record past exercises conveniently and economically and could train new personnel and those not participating in a given exercise program.

A well-conceived cross-telling program needs to be designed for the CONUS, USAFE, and host elements of the COB deployment and employment system. Interwing symposia of units with the same Mission Design Series of aircraft might be useful in the CONUS. The ARF currently use such informal information exchanges. In USAFE meetings among sponsor units, the host clients and Hq USAFE could focus attention on the NATO

augmentation program, its problems, and the future. It is of prime importance to develop host information exchanges because the essence of successful COBs is the continued successful operation of host bases.

Inherent Benefits and Shortcomings. Exercises do afford valuable training and experience. Certainly the deployment and flying program provide overall useful seasoning of the force. Even if the exercise deployment unit is smaller than squadron strength, all elements of the process--USAFE, TAC, MAC and SAC--do participate. The deployed personnel see their COB and meet host base personnel. They work as a team away from the CONUS base and its resources; they fly in the European weather and environment. However, as essential and productive as exercises are, in most instances the peacetime environment inhibits operations and does not provide a comprehensive evaluation of the COB and the infrastructure. Major shortcomings include the following:

- Exercises are of such limited size or duration that the flow of sustaining resources is not even approximated.
- Airlift support is provided on a limited and suboptimal schedule.
- Munitions experience and throughput is limited because of safety and deployment constraints. There is no true evaluation of munitions flows.
- Operations are conducted from generally unhardened and undispersed facilities. Peacetime efficiency criteria dominate at the expense of survivability.
- Flight training objectives and required sortie rates may dominate the other less-visible goals of the exercise, such as evaluating the C3 and the overall mission tasking environment.
- Some tasking does not match the Designed Operations Capabilities (DOC) (tasks in the training syllabus) that the deployed units trained for.
- Specialist manning may be augmented for training and safety requirements. Crew ratios for the aircraft are generally much higher than are likely to be the case in wartime.

- Support personnel from both the sponsor and the host are available in numbers and with a skill breadth that may not be available on short-notice wartime deployments. Wartime primary-duty tasking may limit their availabilities.
- High-level management and command resources and expertise are usually available in quantities not consistent with wartime expectations. The squadron-level command elements may not be realistically tested.

The differences between the wartime objectives and the peacetime training constraints need to be explicitly identified and evaluated. After-action reports and JSP revisions should note them and feed them back to a COB evaluation system for explicit management attention.

COB Status Systems

At present there is no comprehensive current-information system that permits rating the overall readiness of the system; there is no "COB status" system analogous to unit status reporting. We believe such a system is needed, should be designed, and should become a part of USAFE daily operations.

Almost by definition, COBs are different from one another. They reflect the designs, operating procedures, technologies, and national proclivities of various host nations. Because "a COB is not a COB is not a COB" their management and operational oversight must be organized to accommodate their differences, while treating them as a coordinated system.

To ensure that the output of each deployed unit is consistent with the expectations of NATO's air commanders, minimum standards for capabilities and facilities (beyond the MEF) are needed. These standards would ensure reasonable survivability, output rate, and sustainability. These are *not* specifically addressed by the MOUs and JSPs. Standards should provide meaningful measures--e.g., sorties/day, parking capacity--for classifying of COBs by capability or output potential. COBs could also be rated by their importance to the war-fighting plan. Discrepancies between capability and importance could

serve as the criteria for a master priority system for allocating available resources to COB improvement projects in all functional areas.

We propose two COB-reporting systems to interact with the master priority system. One system would monitor project status (as does, for example, the scheme used by a SPO or a Program Management Office). It would report (by COB) schedules and budgets of improvements, progress and status of the MEF and communications facilities, funding arrangements, involved organizations, contractors, etc. Even when every COB achieves full readiness, such a reporting system would be required simply because there would probably still be ongoing improvements of various kinds.

The second reporting system would be a base-status or force-status system. It would report periodically and systematically the operational status of each COB and its facilities--e.g., the time of last visit by a CERT team and its findings, the availability of POL and munitions, general readiness status, operational posture. Such a system would provide CINCUSAFE--and thus NATO--a basis on which to know the contribution that the COBs are ready to make to wartime operations.

With such details available to management, the USAFE staff could adjust wartime planning to reflect the full status of the COB program--and not simply whether a base is "ready." CINCUSAFE would have a realistic view of the expected performance of his augmentation forces. The status of key elements of the COB program is as follows:

- Over 50 of the 70+ COBs have TAs and more than 40 have JSPs; progress is being made on the others.
- MEF buyout and financing arrangements have been programmed.
- Communications suites for 53 COBs have been funded.
- Over 60 percent of COB P³ has been stocked in the theater.

The USAFE staff must solve the problems of fitting over 1600 augmentation aircraft into some 70 European COBs. As already mentioned, the bases are in different states of readiness, have different capabilities and potential, and present a wide variety of support problems. The flank COBs are particularly problematic, and overall survivability and sustainability need to be improved.

Many tasks cut across disciplines and require central direction, close day-to-day monitoring, and coherent planning. The present management structure is diffuse. Programming and oversight activities appear to be centralized in the DCS/Plans staff while the COB "management" responsibilities are spread over each of the staffs of USAFE's functional elements. Furthermore, the 1985 staffing of six people in USAFE/XPXR is not adequate for the size of the job. The absence of a central staff for COB responsibilities may be affecting the maturation and readiness of the COBs and may already have been costly and inefficient. Therefore, we believe certain management initiatives should be considered to insure the future functioning of effective augmentation forces.

MANAGEMENT ISSUES

Despite these accomplishments, difficult challenges lie ahead. Who should be in charge of these efforts? Is the system geared to address these issues on a system-wide basis? We believe not. The objectives of these initiatives are to (1) provide a focus for all COB activities and specify performance goals for the system; (2) define the system to include the COBs, the units, and the support environment unique to COBs; (3) reorganize the assignment of management tasks to maximize incentives for COB system improvement; and (4) furnish the command staff with a true assessment of the augmentation forces beddown structure. Our suggestions are as follows:

- Move responsibility for COB performance from MOB sponsors to some other organization to avoid conflict of incentives and motivation in the command and management structure.
- Consider locations other than sponsor wings for the sponsor responsibility, such as the numbered Air Force or a specific staff agency (already done with the 7100 Combat Support Wing).
- Redefine the sponsor's responsibility to give more tasks to the hosts and augmenting units.

- Redefine the inspection criteria for IG scrutiny, include the supporting elements and units.
- Use alternative standards--e.g., survivability--as an aid in evaluating Coronet or Crested Cap exercises.
- Devise a management structure that establishes priorities across functional areas and ensures that proper attention be devoted to each problem area.
- Assign a responsible advocate for each theater area (North, Central, South) that can measure performance and allocate resources in accordance with needs and political realities (e.g., COBs in Turkey may not be viable without a Greek LOC).
- Specifically consider the two-hatted roles of CINCUSAFE and COMAAFCE in establishing staff responsibilities; there should be a smooth interface between employment and support at COBs.
- In evaluating the COB system, assume that it will have to operate in wartime with peacetime base locations, staff, and responsibilities and procedures.
- Develop and institute evaluation standards and a status reporting system.

Managing augmentation forces is a continuing responsibility whether COBs are involved or not. It requires information flow across many command lines. USAFE would profit if it had a single organization that both managed the COBs and served as a single point of contact with all organizations training, deploying, and supporting the augmentation forces. How this can best be done should be addressed by the USAFE staff.

IV. APPRAISAL AND RECOMMENDATIONS

The initial tasking of this study defined four closely related objectives. These were:

- Assess the current state of the COB network, including the planning for the concept and the role of the organizations involved, and to the extent possible evaluate the planned "status" of the COB bases.
- Evaluate the capability of the COB bases, including their ability to generate and sustain sorties, and identify the factors that limit this capability.
- Suggest possible programs to improve the combat value of the COB complex, including the redefining of unit roles and missions and the development of management systems.
- Recommend actions to improve the wartime readiness of all COB-related resources, and to enhance the flexibility of the deployed forces to survive and reposture themselves for wartime employment.

The COB network involves almost the total spectrum of Air Force war-fighting and support organizations. Through the exercise process these organizations have proven their capability to plan, deploy, and operate at selected COBs in Europe. However, the gap between an exercise program and a wartime operation is of unknown magnitude.

In evaluating each phase of the movement to and employment of forces in the theater, we have identified selected issues needing attention and action by the theater command staff. From these sets of issues we believe the USAFE staff must develop two general policy areas to insure that the COBs, as a system, provide the defense posture planned. They are:

- A concerted program to increase the peacetime emphasis on developing the COBs as a system.
- Specific programs to evaluate, test, and increase the war-fighting capabilities of the COB-based augmentation air forces.

CURRENT STATUS

During 1984, USAFE took several steps to deal with the increasing scope of COB management. Major initiatives include the establishment of a command PROTAF (Project Task Force) that serves as a forum for identifying and addressing COB-related issues. The major tools of the PROTAF are PPlans (Program Plans) it drafts and the USAFE staff Office of Primary Responsibility assigned to it. Staff functional elements are treated as independent agencies that the PROTAF must negotiate with. Another step the Command has taken is to assign some of the sponsor unit duties now currently assigned to the various fighter wings of the 17th Air Force to a newly established 7100th Combat Support Wing.

However, periodic tasking meetings and reports will not be enough to handle problems in the buildup of the MEF, the configuration and provision of EOF for combat operations, and the development of the support system. All will need simultaneous and phased programmatic attention with appropriate levels of cross-functional direction to insure consistent priorities and resource allocations.

We believe that the USAFE must reposture its management structure. The structure needs to effectively deal with the complexities of moving from a COB concept that dealt primarily with MEFs and TAs to one that can plan for and implement a program to insure a war-fighting capability. Such a concept would require a management control system as robust as that needed to manage the peacetime operations of the in-place peacetime force now in Europe (which is only 40 percent of the wartime force). This repostured peacetime management organization must deal in detail with the following issues:

- Maintaining the programming momentum within NATO while redirecting the system goal from the MEF to the full Essential Operating Facilities required to initiate and sustain a wartime posture at each COB.

- Planning the specifics needed at each COB to achieve such a posture and providing a focus for ACELIP actions.
- Developing and promulgating a priority system to insure that available resources are allocated in such a way that the COBs that would be most contributory to the war-fighting capability are funded first.
- Defining and establishing survivability criteria and standards consistent with the location and vulnerability of each of the COBs.
- Centralizing the decision and control process of all relevant functional elements to assure balance in construction support planning, resource allocation, and reporting and monitoring activities.

We believe a project office management approach would be useful. It may be possible to establish project office branches in the numbered Air Force headquarters to offload USAFE, but because some of the problems associated with COBs are system-wide, the Hq/USAFE must be totally involved.

Today's and tomorrow's tasks require more than yesterday's level of effort. Part-time solutions will not do if 60 percent of the future fighting assets are to be postured as a credible force.

WARTIME OPERATIONS

The large majority of COBs have been employed for a number of years to support USAFE-controlled training exercises. This use of the COBs has provided tactical air units the opportunity to deploy and conduct training in the geographical area in which wartime operations may be required. The assignment of specific units to specific COBs and the development of detailed JSPs for the unit base combinations has increased the credibility of the basing concept on both sides of the Atlantic.

However, even such major steps toward operational capability require additional confidence-building measures to translate them into a posture that could provide a true wartime operating capability. USAFE

has recognized this and is pushing forward with several initiatives to insure wartime utility. Chief among them are studies of airbase defenses and the provision of interim buildings and fuel storage to guarantee MEF at all bases. In most instances, airbase defenses are the responsibility of the host nation and need only to be specified in the JSPs. In the case of storage for prepositioned equipment and WRM fuel, plans are under way for providing ISO containers and concrete slabs to fill out MEF shortages.

We have identified at least five additional major actions that would contribute directly to increasing confidence in wartime operability.

- *Major testing and exercising of the support infrastructure for both COBs as bases and as a system.* Such tests must be of greater scope than command post exercises. They should include both planned and unplanned movements, handling, and storage of required quantities of wartime consumables (dummy or real) to the limits of the COB system. For the flank bases, these tests should include realistic transshipment and multimode movements of large quantities of materiel, with simulated wartime dislocations and impediments. Land and air shipments of nonconsumable material (spares and engines) should be tested with special emphasis on exercising the EDS and Movement Information Network. System-wide priorities should be identified and movement control managed through the theater logistics command post. The COBs should also be netted to the logistic system through the sponsor base network and to provide theater management of spares to stress the Phase IV and SBSS computers with wartime loads. Such tests will almost certainly identify problems not yet experienced by the support systems.
- *Full exploitation of the deployment program to provide a systematic evaluation and knowledge for the improvement of COBs.* Each deployment uncovers topics that may or may not have general application. At present, no single agency or office compiles, analyzes, or requires action on problems. After-action reports differ in format from unit to unit and

have differing levels of detail. Little attention is given to longer-run problems, especially those not directly affecting the objectives of the training exercise. In most instances the reports get little attention, what they do get is generally confined to the COB/augmenting-unit pair. Little cross-telling among units, commands, and numbered air forces is planned or accomplished. For the most part, reports appear to be noted and filed.

Certainly the most appropriate time to evaluate a COB/air-unit pair is during the time it is being used. A modified ORI/MEI might be appropriate for both Checkered Flag and Crested Cap deployments. This could be conducted by USAFE Inspector General or the COB project office of the numbered Air Force. The emphasis would not be on the exercise goals but rather on the COB/air-unit/support system interaction. In any event, the shortfalls interaction needs to be identified and corrected if the COBs are to be a dependable sortie source.

- *The introduction of large uncertainties to the deployment and beddown process so that concepts of COBs as a basing system can be evaluated.* One thing is certain about all emergency situations including war--nothing goes as planned. Units will have to be rebased and redeployed; facilities will be unavailable; communications will be out; resupply will be late. The exercise program should, to the extent possible, reflect such uncertainties. With proper planning, three types of uncertainty can be simulated and evaluated: short-notice deployments, diversions, and multiple simultaneous deployments.

Current deployments have long planning and preparation times, which are unrealistic; an exercise should be planned in which both the unit and the COB have as little warning as possible. A short-notice or in-flight diversion from one COB to another should be attempted to determine what effect this would have on the ability of the new COB/air-unit match to generate and sustain wartime sorties. Finally, to provide a real test of system capability, multiple simultaneous deployments should be tested to get a true measure of the throughput and capacity

capabilities of the total Air Force planning control and operational system. Serial deployments are routinely accomplished. By design, the amount of airlift and refueling capacity is carefully scheduled, and problems still arise. By placing even larger pressures on the system, USAFE can identify problems, plan for their resolution, and assure itself of system credibility.

- *Practicing operations under conditions that more closely reflect wartime survivability requirements.* Most units now deploy and operate in configurations that are most efficient for turning aircraft and maximizing sortie rates. These configurations usually concentrate aircraft, maintenance facilities, spares, and personnel in a limited physical area. Such resources, along with concentrations of command and communication assets, constitute attractive and critical targets for hostile actions, from both the air and the ground.

To more truly represent wartime capabilities, units should be required to operate under conditions representing compromise between effectiveness and survivability. Potential targets should be dispersed, camouflaged, and hardened as much as possible. Each JSP should contain a survivability addendum that contains guidance and metrics for minimizing vulnerabilities and that specifies the best conditions for wartime operations. The true sortie output of a COB/air-unit combination can only be determined by simulating wartime operations.

- *A program that subjects the COBs to continuous evaluation.*

This program should use the same inspection criteria and tests that are used at MOBs, because COBs and MOBs are really all part of the same system. Evaluation points include the following:

- Can the wartime potential of the COB/augmenting-unit mix be evaluated during peacetime?
- Is there a program to insure survivability? Does it include dispersal, base air defenses, camouflage, and deception? Has it been exercised or evaluated in its wartime mode?
- Does each COB function as planned with the units in place?

- Has the replenishment system been exercised?
- Are the overall CONUS and theater infrastructures postured to support the greatly expanded basing system that the COBs present?
- Is the current posture adaptable to change? Is flexibility planned as a criterion?
- Can COBs sustain operations under degraded conditions? Have they been tested in that regard? What systems are critical?
- Are the communication systems hard and redundant?

If the measures noted above are addressed on a continuing basis, system confidence will improve. This is important for two reasons:

If the system is shown to work or gives promise of viability, more resources are likely to be allocated than might be under a bail-out situation. COBs will always compete with other requirements for funds, so the higher the confidence that they can provide an increase in capability, the easier the funding from both U.S. and host nation or NATO sources will be.

Furthermore, if the COB system demonstrates that it will provide a sound wartime basing concept, commanders will have confidence in it and will plan to employ augmenting units more effectively.